

英 語

東北医科薬科大学医学部 2024 年度型 そっくり類題セット

※ これは東北医科薬科大学の入試問題ではありません。
2024 年度の出題形式（大問の数・設問の構成・解答形式）をもとに、
TMPS 医学館が題材や設問を変えて作成したオリジナル問題です。
本文中の人物・大学・研究機関はすべて架空です。

試験時間の目安：54 分（本番の 70 分から、掲載のない大問 の 16 分を除く）

大問	ページ	時間配分の目安
【I】（長文：騒音と学習）	2	22 分
【II】（長文：コケの壁と大気）	5	18 分
【III】（誤り指摘）	8	8 分（見直し 6 分）

注意事項

- 問題は【I】～【III】の全 3 題、解答欄は ～ 。すべて「選んで番号をマークする」形式。
- 【I】【II】は、各設問で最も適切なものを①～④から一つ選ぶ。【III】は下線部①～④のうち誤りを含むものを一つ選ぶ。
- 解答・解説は、解説ページ（TMPS 医学館の過去問解説図書館）に掲載している。

[I]

次の英文を読み、問1～15の設問の解答として、もしくは設問中の空欄に入るものとして最も適切なものを選択肢①～④から一つ選び、その番号をマークせよ。なお、[1]～[10]はパラグラフ（段落）の番号を表している。

[1] Priya Nandakumar still remembers the spring her street was torn up. Workers spent months replacing old water pipes outside her apartment, and drills roared from morning to evening. A university student at the time, Priya was preparing for her final exams. She tried studying at home with a pillow over her head, then in the library, then with music in her ears. Nothing seemed to help. She kept rereading the same page. “I felt like my head was full of static,” she says.

[2] Priya passed her exams, but her marks were lower than she had hoped. Her roommate, who studied in a quiet town an hour away, did much better, though the two had worked equally hard. Priya wondered whether the noise had been partly to blame. At first she thought she was only making excuses. Her friends laughed and said everyone gets distracted. But the question stuck with her.

[3] Priya is not alone. As cities have grown, there have been more and more complaints about trouble with noise, not only near building sites but also in homes, schools and open offices. Some people say they still cannot concentrate in the weeks and months after a noisy project ends. But proving that sound is the cause is harder than it seems.

[4] Scientists have long suspected that noise harms learning. In the 1970s, researchers who studied children living beside a railway found that those pupils read more slowly than classmates from quieter streets. Since then, studies have shown that loud, unpredictable sounds can disturb memory and attention more than a steady hum does. Even so, for many years noise was seen mainly as a minor annoyance rather than a health issue.

[5] Henrik Vos directs the Listening Lab at Calder University in Denmark. When he asks volunteers to memorize word lists while recordings of street traffic play, they remember fewer words than people working in silence. The volunteers also give up sooner on the hardest puzzles, the ones that demand the most attention. Simple tasks, by contrast, take about the same time with or without the traffic noise.

[6] Stress hormones, chemicals that prepare the body to react to danger, appear to play a major role, Vos says. When volunteers hear sudden loud sounds, levels of the hormone cortisol rise, causing their attention to narrow. When scientists give volunteers a drug that lowers cortisol, the noise bothers them less — even when the sounds stay just as loud.

[7] It’s harder to do the same kind of research in schools, and results are mixed about how noise changes real learning. But studies suggest that, at least to some extent, children react in ways comparable to adults. In studies from the 2000s, researcher Anita Roos and colleagues played recordings of classroom chatter to pupils and found that even moderate noise lowered reading scores and heightened tiredness.

[8] But once the noise went on for weeks, people showed patterns not typically seen in short experiments. “A short burst of noise makes people work harder for a while,” Vos says. “But over time, that extra effort wears you down.”

[9] To see how long-term noise affects students, Vos and colleagues recruited 120 first-year students who lived near a busy road. For one semester, the students kept a detailed study diary and wore a small sensor on their wrists that measured sleep. Thirty students withdrew before the end. Overall, the students who lived on the noisiest side of the building slept less and studied longer each week, the researchers reported in 2023.

[10] (①) But the extra hours did not pay off. (②) Students on the noisy side needed longer to finish the same tasks and made more errors on weekly quizzes. (③) Anecdotally, that matches what many students say about living near roadwork: long hours at a desk with little progress. (

- ④) The effort of ignoring the sound seems to use up energy that would otherwise go to learning, Vos says.

問1 According to paragraph [1], Priya ([1]).

- ① moved away from her street before the exams
- ② tried several ways of studying but none helped
- ③ stopped studying after the first week
- ④ found that music cleared her mind

問2 According to paragraph [2], Priya's roommate ([2]).

- ① worked less hard than Priya
- ② took the exams a year later
- ③ studied in a quiet town and did much better
- ④ also had drills outside her home

問3 According to paragraph [3], as cities have grown, there has/have been ([3]) trouble with noise, not only near building sites but also in homes, schools and offices.

- ① few reports of
- ② a decline in complaints about
- ③ an increase in complaints about
- ④ a cure for

問4 According to paragraph [4], what have studies shown? [4]

- ① Sudden, loud sounds can disturb memory and attention.
- ② A steady hum is harder to ignore than sudden sounds.
- ③ Quiet streets cause memory problems in children.
- ④ Noise helps children read more slowly.

問5 According to paragraph [4], for many years noise was ([5]).

- ① thought to improve concentration
- ② treated as a serious health risk
- ③ blamed only for slow reading
- ④ seen mainly as a minor annoyance

問6 According to Henrik Vos in paragraph [5], experiments with traffic recordings show that noise can ([6]).

- ① lengthen the word lists people see
- ② lower the number of words people remember
- ③ make volunteers forget the recordings
- ④ speed up simple tasks

問7 According to paragraph [5], which of the following is TRUE? [7]

- ① People hearing traffic gave up sooner on the hardest puzzles.
- ② People in silence recalled fewer words.
- ③ People hearing traffic finished simple tasks sooner.
- ④ Only the easiest puzzles were affected by noise.

問8 According to Vos in paragraph [6], increased levels of cortisol can ([8]).

- ① block loud sounds
- ② narrow a person's attention
- ③ widen a person's attention
- ④ lower a person's stress

問9 According to paragraph [6], what happens when the level of cortisol is lowered? [9]

- ① The sounds become quieter.

- ② People fall asleep sooner.
- ③ Their attention narrows further.
- ④ They are bothered less by the noise.

問10 The word “comparable” in paragraph [7] is closest in meaning to (10).

- ① different
- ② limited
- ③ similar
- ④ opposite

問11 The word “heightened” in paragraph [7] is closest in meaning to (11).

- ① lowered
- ② examined
- ③ hid
- ④ raised

問12 Paragraph [8] can be summarized as follows: (12) in humans.

- ① short bursts of noise are harmful but long noise is harmless
- ② noise can help at first, but exposure over weeks can wear people down
- ③ extra effort during noise improves results in the long run
- ④ weeks of noise improve people’s scores

問13 According to paragraph [9], Vos and colleagues (13).

- ① measured how loud the roads in the city were
- ② proved that wrist sensors improve sleep
- ③ tried to show that noise is harmless
- ④ investigated how long-term noise may affect students

問14 According to paragraph [9], which of the following is true of their research? 14

- ① Exactly one-quarter of the students left the study early.
- ② All the students studied longer than before.
- ③ The students recorded their grades every day.
- ④ The sensors measured the volume of traffic.

問15 Look at the paragraph [10]. Where would the following sentence best fit in the paragraph?
Choose (①), (②), (③) or (④). 15

They also lost focus most often when traffic was heaviest.

【II】

次の英文を読み、問1～12の設問の解答として、もしくは設問中の空欄に入るものとして最も適切なものを選択肢①～④から一つ選び、その番号をマークせよ。なお、[1]～[6]はパラグラフ（段落）の番号を表している。

[1] Walk past a gray concrete wall in a busy city and you might not give it a second look. But some walls wear a thin green coat of moss. Scientists have long known that moss traps bits of dust from the air. No one knew whether a moss wall could really clean the air beside a busy road — until now. A study has just given a first answer.

[2] Researchers in Portugal reported the results in the journal *Urban Ecology Letters*. The worry is fine dust. Technically, a particle is called “fine” if it is smaller than 2.5 micrometers. Such particles can slip deep into the lungs. And that’s what makes city air hard to clean, says Tiago Ferreira, an engineer in Porto. Ordinary filters miss most of it. Amira Haddad is a public health specialist in Cairo, Egypt. She did not take part in the new study. Fine dust, she adds, “has been linked to asthma.” Cities need cheap ways to cut it.

[3] Inês Carvalho and Tomás Rocha were part of a team at the University of Porto. As materials scientists, they test ways to clean the air. (①) No one had tested moss walls on real streets before. (②) Counting fine dust in open air isn’t easy. You can’t just watch the air and count. (③) They fixed moss panels to 30 walls along busy roads and placed a sensor beside each one. (④) Each sensor counted particles smaller than 2.5 micrometers (0.0001 inch) across. For perspective, a grain of table salt is about 100 times wider.

[4] After one year, the team compared dust beside the moss with dust at 30 bare walls nearby. Fewer particles were counted next to the moss at 24 of the 30 sites. That’s four in every five. Half of those 24 sites had moss thicker than 5 centimeters. Where the moss had dried out in the hot summer, the walls did no better than bare concrete.

[5] The team also traced where the dust came from. Much of it was bits worn off tires. Smaller shares came from brake pads and from construction work. The team also looked for soot from diesel engines but found none. If it was present, they say, it was at levels too low to detect.

[6] “Cities are full of walls,” says Kofi Mensah. He is an urban planner at the University of Lagos in Nigeria. He did not take part in the Porto study. But in a March review, he helped examine green walls in hot countries. The data are so limited that “we don’t really know how well they work,” he cautions. “It’s hard to judge,” he adds, partly because “moss stops growing in hot, dry weather, and every site is different.”

問1 The word “traps” in paragraph [1] is closest in meaning to (16).

- ① releases
- ② creates
- ③ catches
- ④ ignores

問2 According to paragraph [1], scientists have long known that (17).

- ① moss grows only on concrete walls
- ② moss catches bits of dust
- ③ walls near roads are always green
- ④ city air is clean near moss

問3 According to paragraph [2], technically, a particle is called “fine” if (18).

- ① it is smaller than a set size
- ② it comes from traffic
- ③ it can be caught by ordinary filters
- ④ it reaches the lungs

問4 According to Tiago Ferreira in paragraph [2], ordinary filters ([19]).

- ① are too expensive for cities
- ② remove most fine dust
- ③ are made of moss
- ④ miss most of the fine dust

問5 Look at the paragraph [3]. Where would the following sentence best fit in the paragraph? Choose (①), (②), (③) or (④). [20]

So this team found a way.

問6 The phrase “For perspective” in paragraph [3] is closest in meaning to ([21]).

- ① To give a sense of scale
- ② As a result
- ③ In conclusion
- ④ Unfortunately

問7 According to paragraph [4], fewer particles were counted next to the moss at ([22]) of the sites.

- ① fewer than half
- ② about one in three
- ③ more than three in every four
- ④ all

問8 According to paragraph [4], how many sites had both less dust and moss thicker than 5 centimeters? [23]

- ① 6
- ② 12
- ③ 18
- ④ 24

問9 According to paragraph [5], which of the following is NOT mentioned as a source of the dust? [24]

- ① Chimneys of factories.
- ② Tire wear.
- ③ Brake pads.
- ④ Construction work.

問10 According to paragraph [5], which of the following is TRUE? [25]

- ① Diesel soot was found at very high levels.
- ② The team looked for diesel soot but found too little to detect.
- ③ Moss trapped more soot than tire dust.
- ④ Cooking smoke was the main source.

問11 According to paragraph [6], which of the following is TRUE of Kofi Mensah? [26]

- ① He led the study in Porto.
- ② He tested moss walls in Lagos.
- ③ He measured dust in Cairo.
- ④ He did not take part in the Porto study.

問12 According to Mensah in paragraph [6], it is hard to judge how well green walls work because ([27]).

- ① moss grows too quickly to measure
- ② walls are too tall to reach
- ③ the data are limited and every site is different

④ nobody wants to build them

【III】

次の問1～10に示された英文は”Learning from Mistakes”と題する一続きの文章の冒頭である。各問いにおいて、下線を付した語句①～④のうち、文法・語法上または文脈上の誤りを含むものを一つ選び、その番号をマークせよ。

問1 28

Schools do not only teach facts. ①Addition, they ②help students ③learn how to ④think.

問2 29

Students are often afraid ①of ②ask questions ③in class ④because they fear being laughed at.

問3 30

The ①number of ②students who take part in clubs ③have ④increased recently.

問4 31

①Much of the ②students ③in my class ④enjoy reading.

問5 32

The story was so ①bored that ②many students ③fell ④asleep.

問6 33

This is the room ①in ②that we ③hold ④our meetings.

問7 34

By the time we ①arrived at school, the lesson ②had ③already ④begin.

問8 35

Please ①lay ②down on the mat ③and ④relax.

問9 36

It is ①important that every student ②to have ③a ④clear goal.

問10 37

Each student must bring ①his or her own lunch, ②because ③there ④are no shop nearby.

終